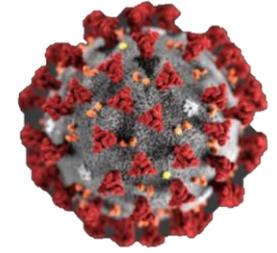


New Hampshire Coronavirus Disease 2019 Weekly Call for Healthcare Providers and Public Health Partners



April 22, 2021

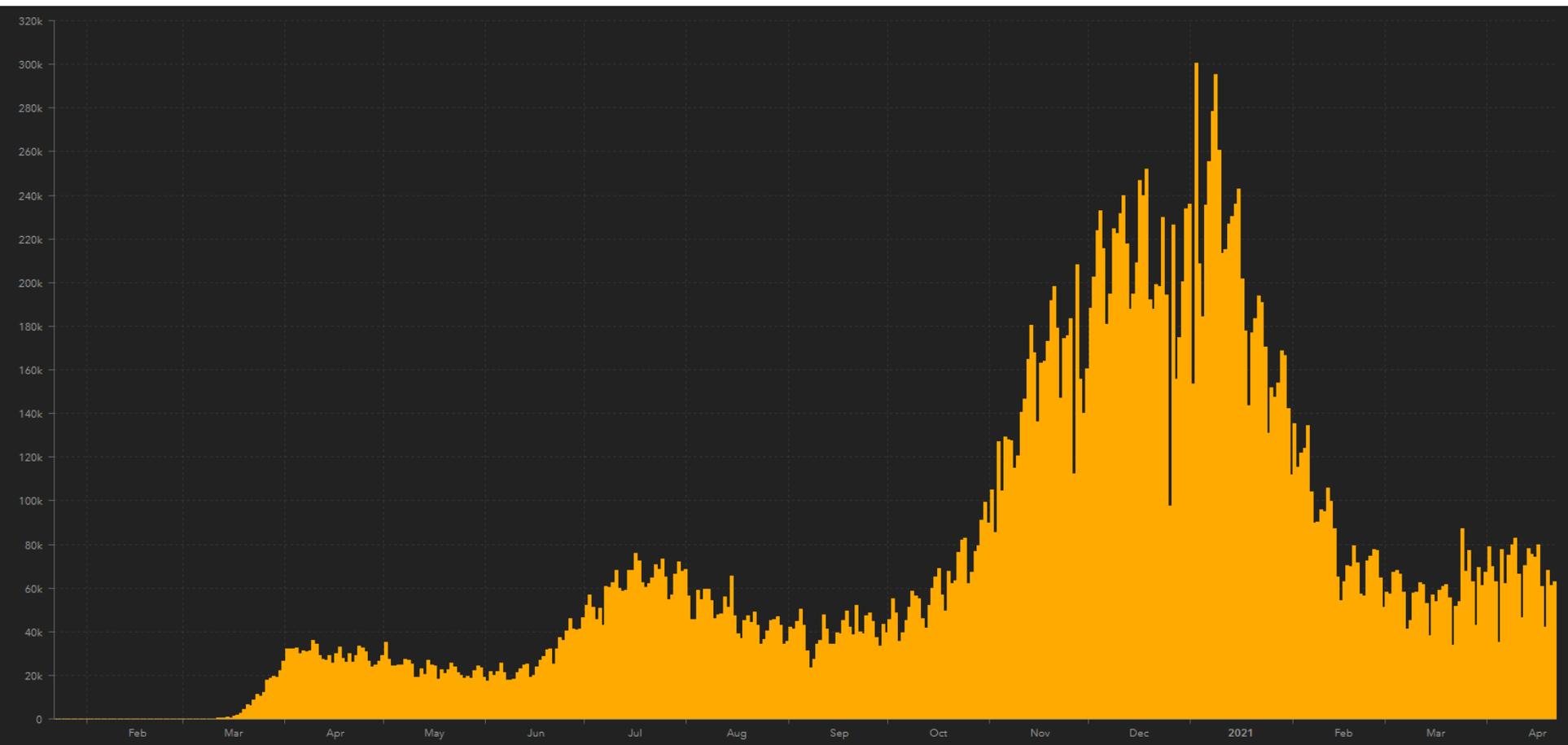
*Ben Chan
Elizabeth Talbot
Beth Daly
Lindsay Pierce*

Thursday noon-time partner calls will focus on science, medical, and vaccine updates geared towards our healthcare partners

Agenda

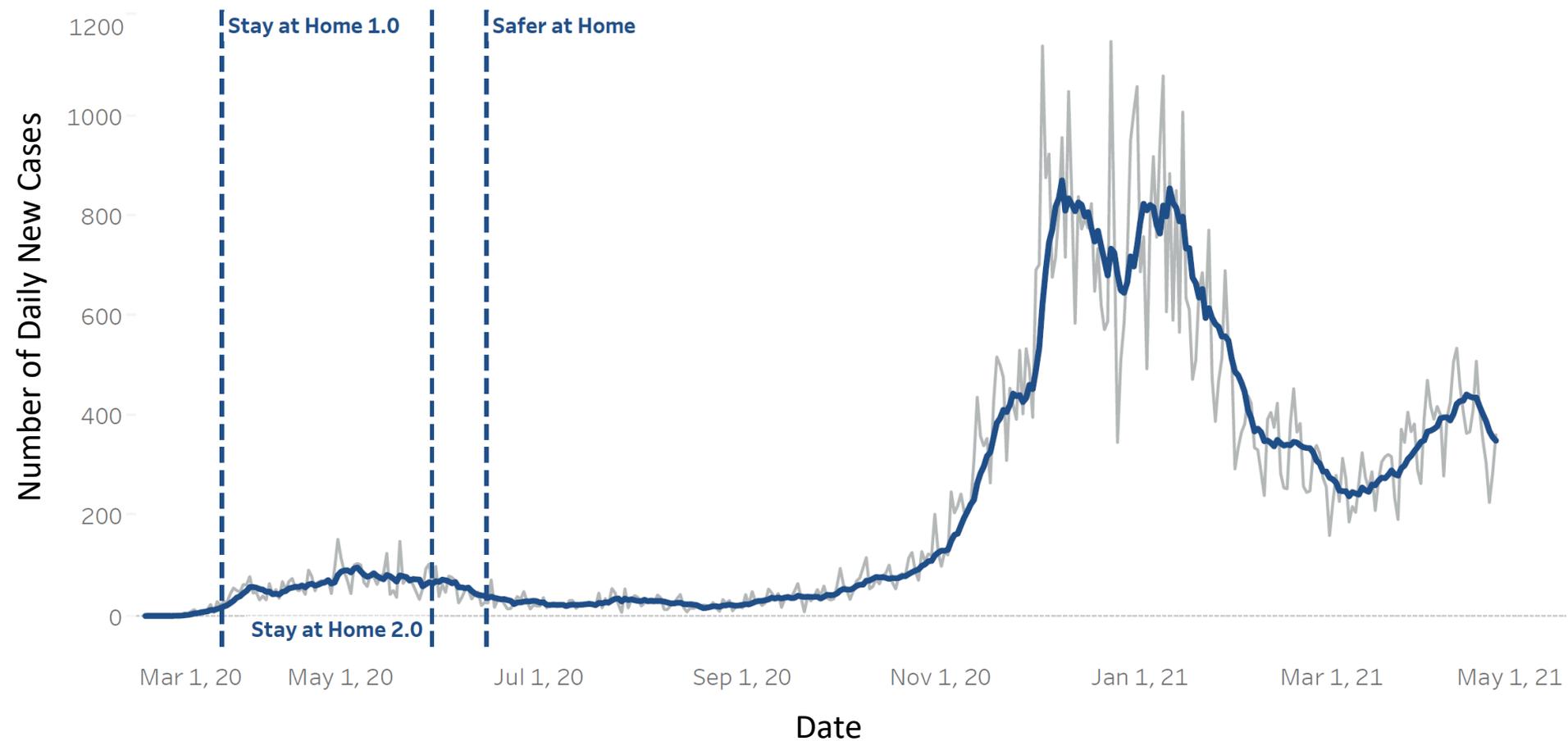
- Epidemiology Update
- Moderna and Pfizer-BioNTech COVID-19 vaccine efficacy and antibody levels at 6 months
- Questions & Answers (Q&A)

National Daily Incidence of COVID-19



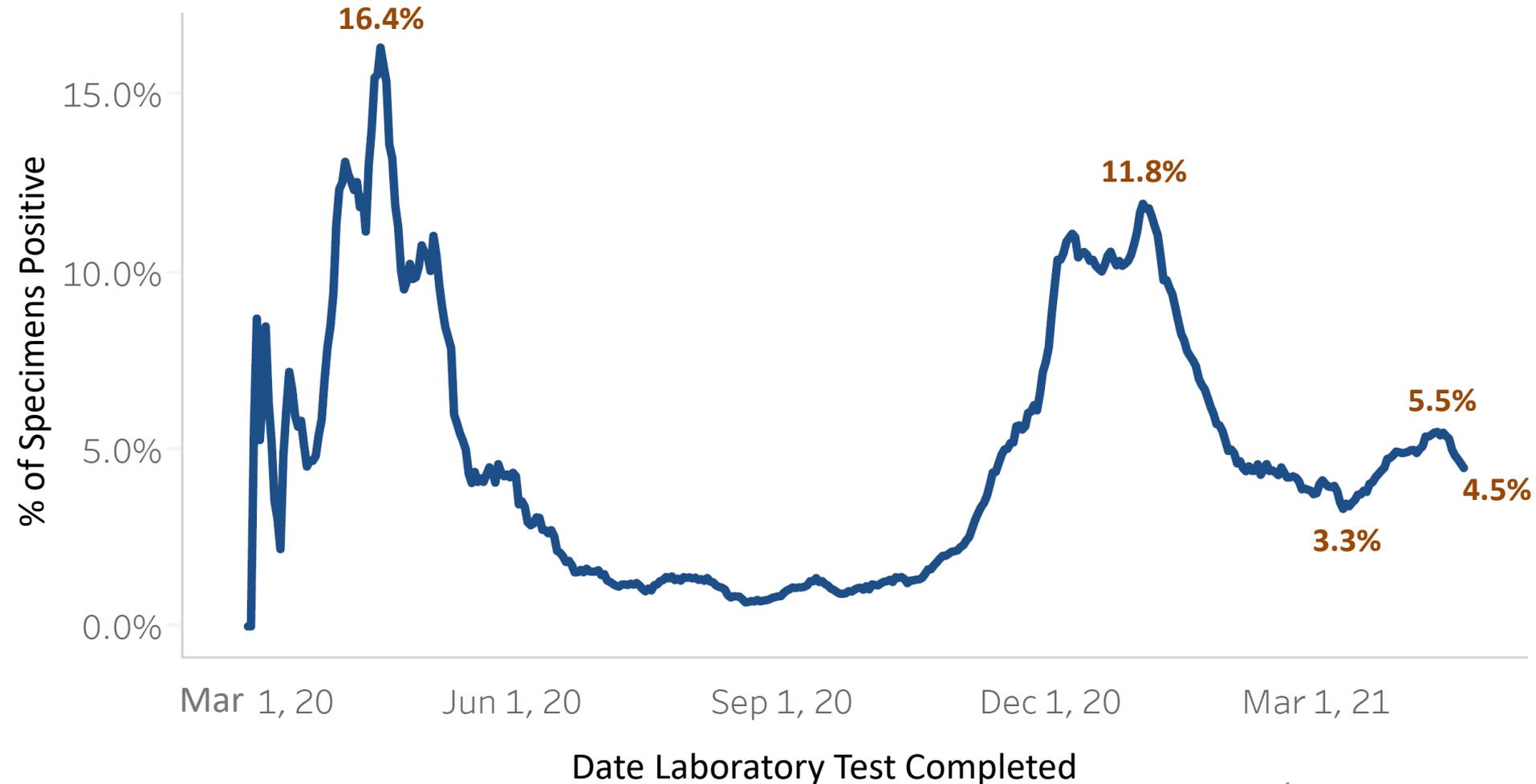
- More than 31.8 million cumulative cases in the U.S. (22% of all global infections)
- More than 569,000 deaths in the U.S. from COVID-19 (19% of all global deaths)

Number of New COVID-19 Cases per Day in NH

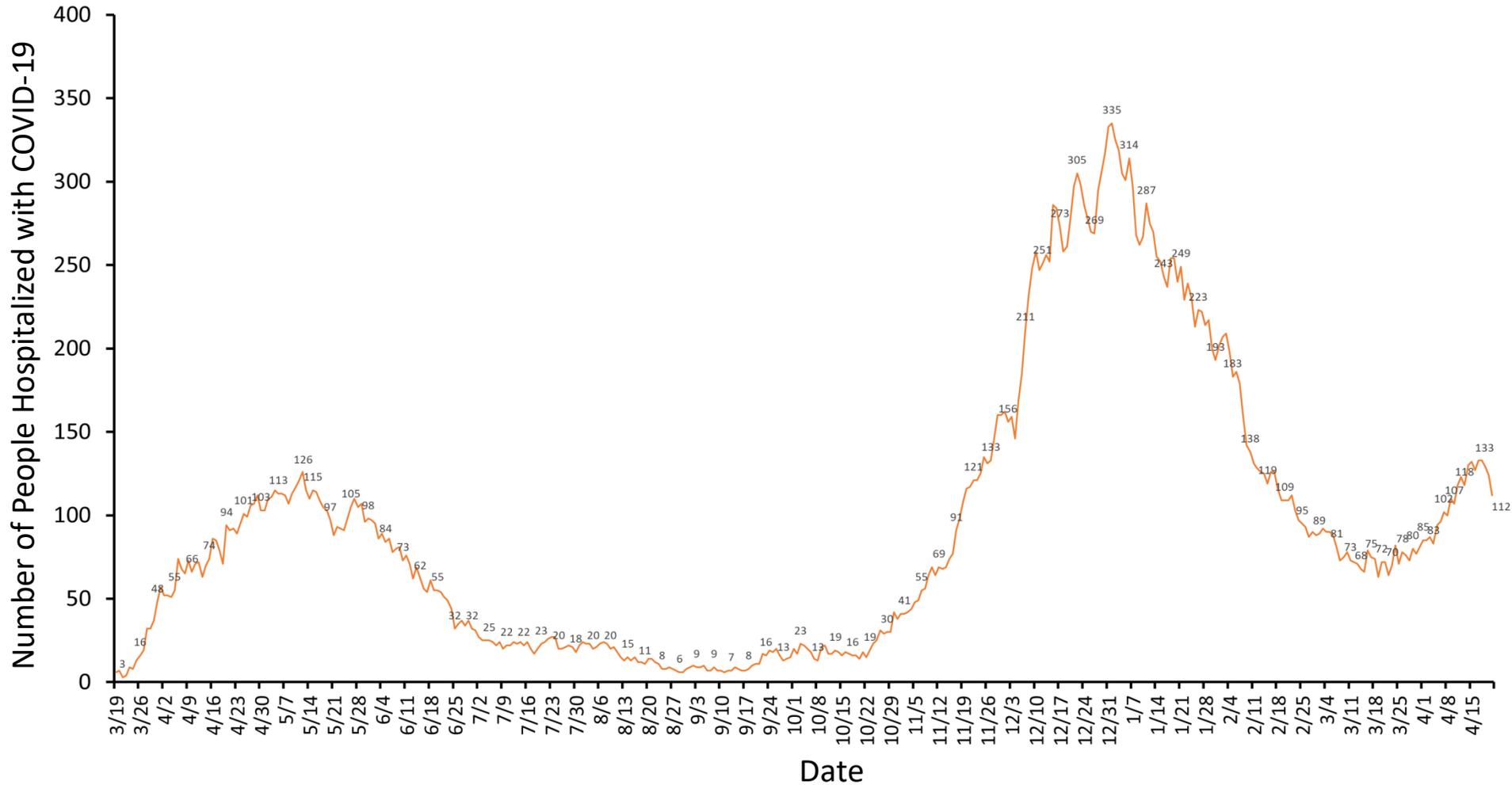


<https://www.nh.gov/covid19/dashboard/overview.htm#dash>

% of Tests (Antigen and PCR) Positive for COVID-19 (7-Day Average)



Number of People Hospitalized with COVID-19 Each Day in NH (Hospital Census)

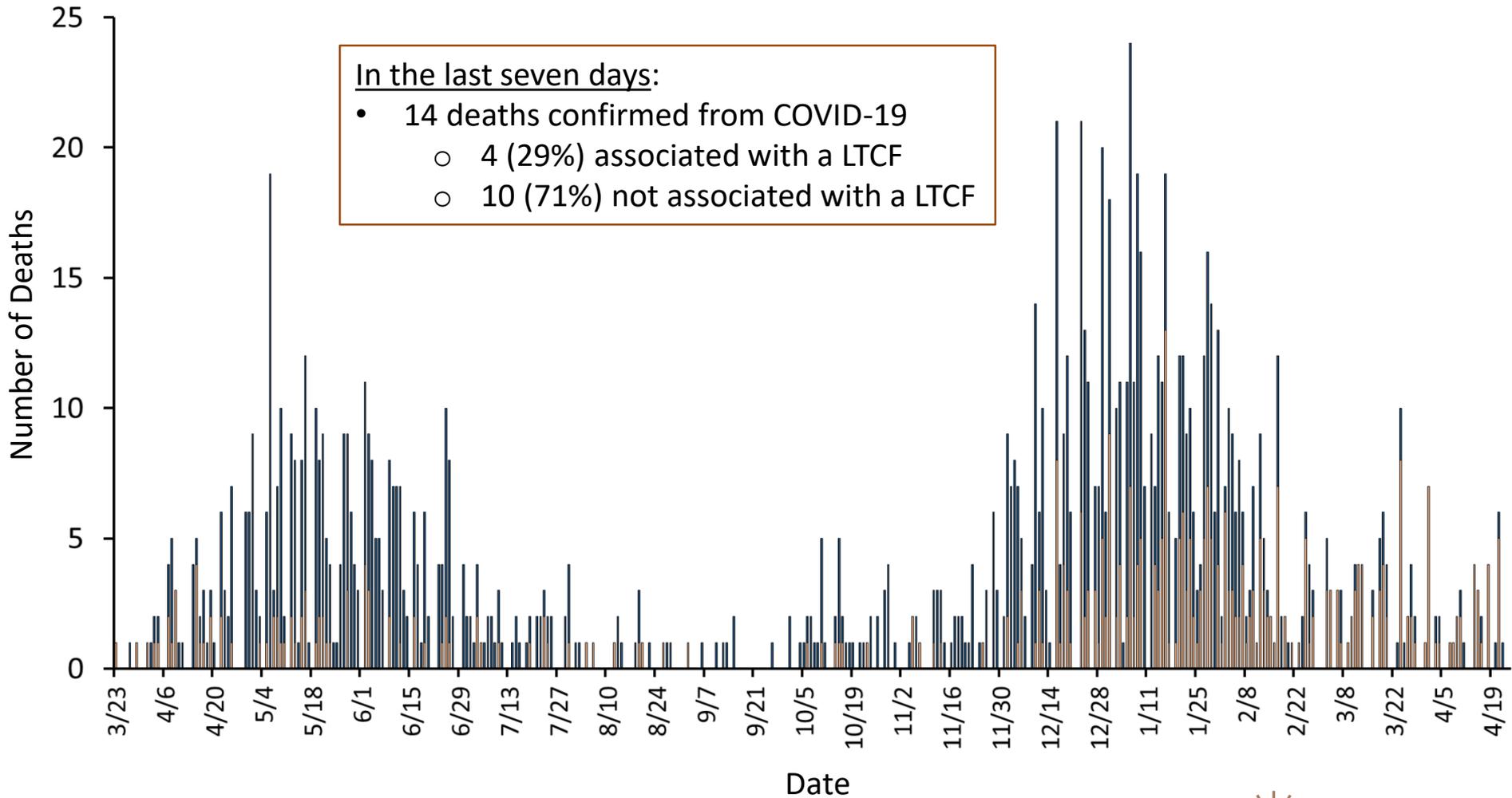


Number of COVID-19 Deaths in NH by Report Date

■ Non-LTCF Associated ■ LTCF Associated

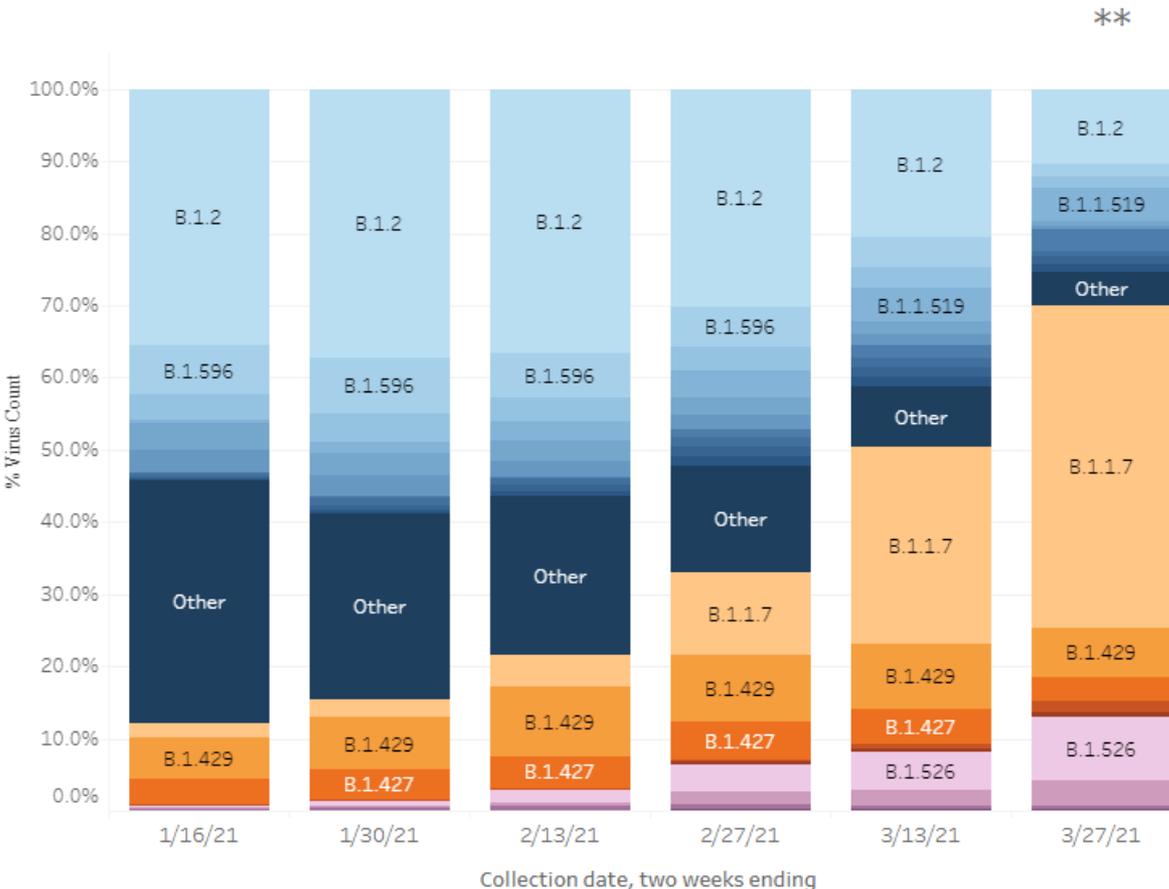
In the last seven days:

- 14 deaths confirmed from COVID-19
 - 4 (29%) associated with a LTCF
 - 10 (71%) not associated with a LTCF



Variant Proportions in the U.S.

SARS-CoV-2 Variants Circulating in the United States, January 3 – March 27 2021



	Lineage	% Total	95%CI	Type	
Most common lineages	B.1.1.7	44.7%	41.8-47.5%	VOC	
	B.1.2	10.5%	9.5-11.6%		
	B.1.526	8.9%	6.9-11.4%	VOI	
	B.1.429	6.9%	5.2-9.0%	VOC	
	B.1.1.519	4.5%	3.8-5.3%		
	B.1.526.1	3.6%	3.0-4.2%	VOI	
	B.1.526.2	3.2%	2.6-3.9%		
	B.1.427	3.1%	2.4-4.0%	VOC	
	B.1	1.6%	1.4-1.9%		
	B.1.596	1.6%	1.3-2.0%		
	P.1	1.5%	1.1-2.1%	VOC	
	R.1	1.1%	0.9-1.4%		
	B.1.575	1.1%	0.8-1.4%		
	B.1.243	0.7%	0.5-0.9%		
	B.1.1	0.7%	0.4-1.0%		
B.1.234	0.5%	0.3-0.6%			
Additional VOI/VOC lineages	B.1.351	0.7%	0.5-1.1%	VOC	
	P.2	0.3%	0.2-0.4%	VOI	
	B.1.525	0.3%	0.2-0.4%	VOI	
Other*	Other	4.7%	4.0-5.5%		

Summary data that appear in the table include specimen collection dates from March 14 through March 27, 2021.

* Other represents >200 additional lineages, which are each circulating at <1% of viruses

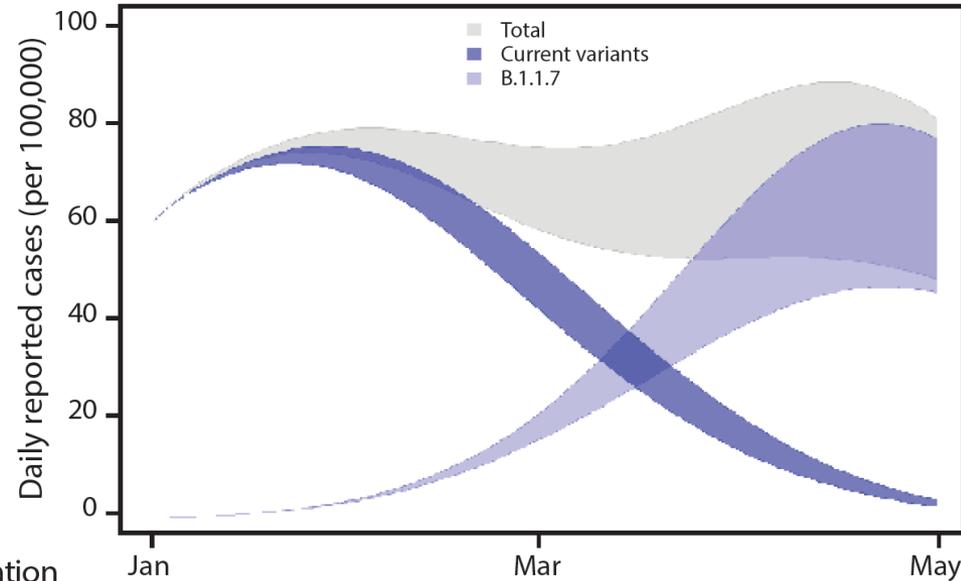
** Most recent data are subject to change as samples from that period are still being processed.

Updated 4/20/2021

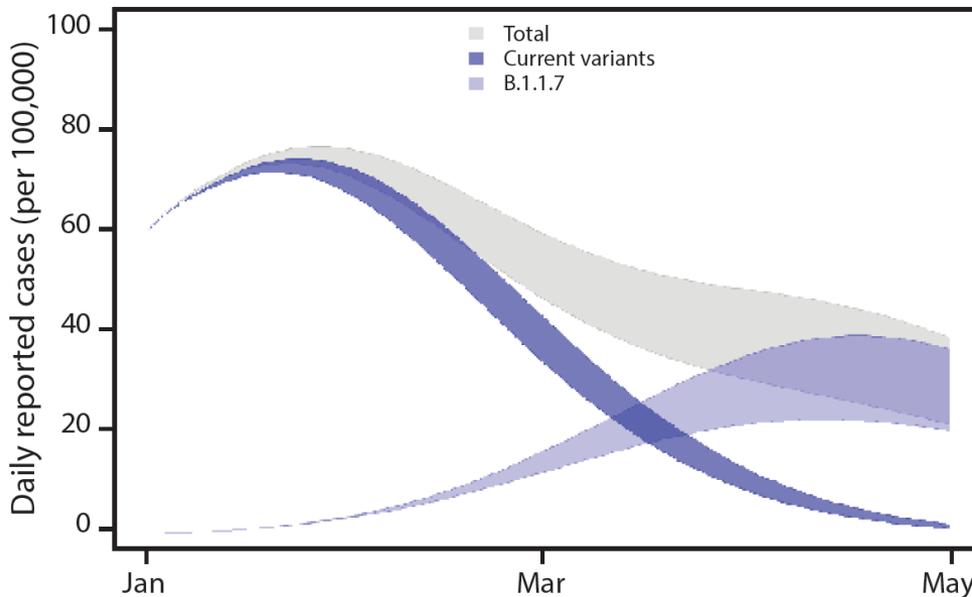
Emergence of B.1.1.7 Lineage

(CDC publication: January 22, 2021)

A. Reproductive number 1.1 on January 1, 2021; no vaccine

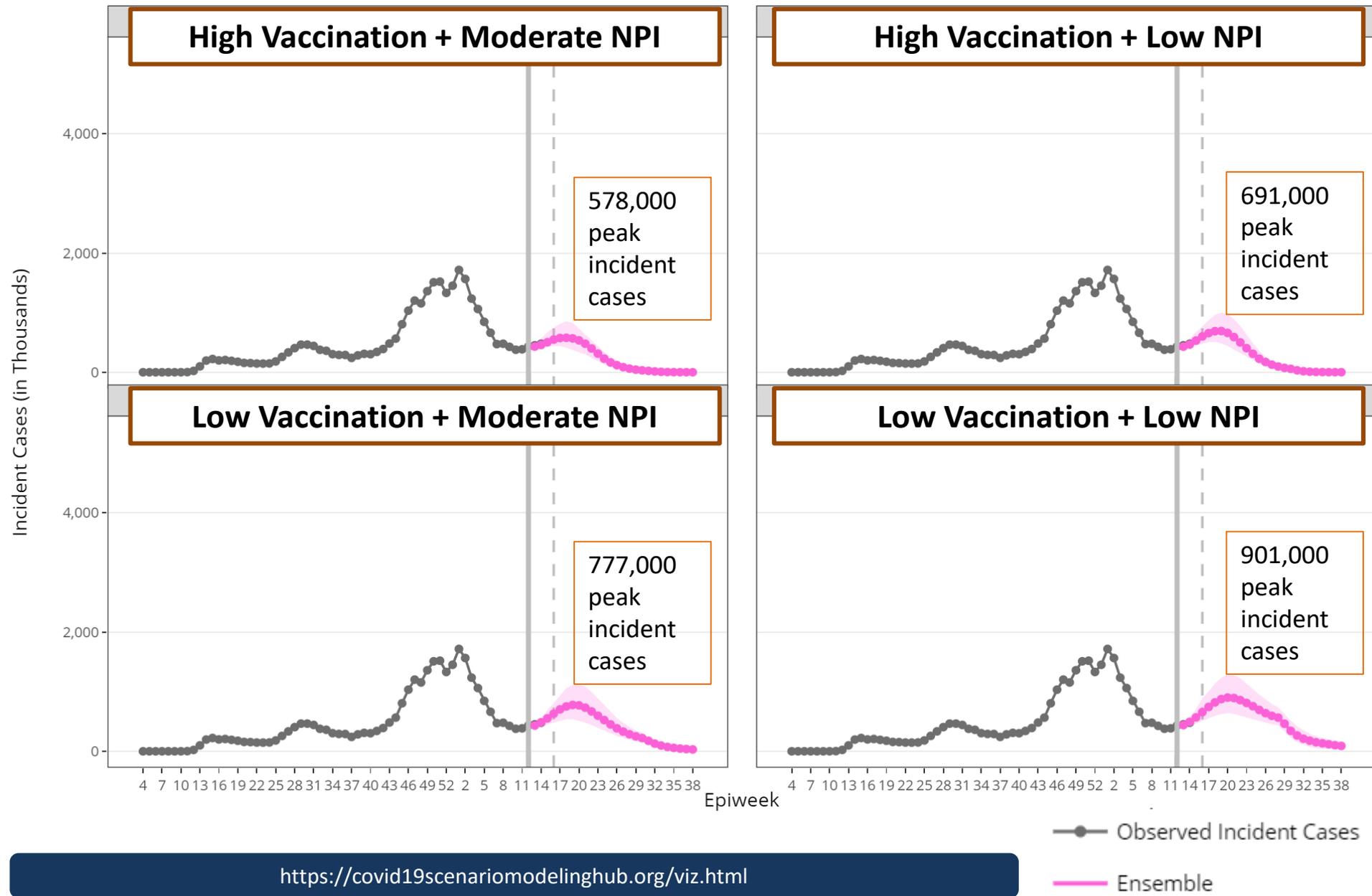


A. Reproductive number 1.1 on January 1, 2021; with vaccination



<https://www.cdc.gov/mmwr/volumes/70/wr/pdfs/mm7003e2-H.pdf>

Modeling: Both Vaccination and NPIs Are Important



Vaccination + Non-Pharmaceutical Interventions (NPIs)

- ~50% of NH's population has received at least 1 dose of a COVID-19 vaccine
 - ~25% of NH's population is now fully vaccinated
- NPIs like face mask use, social distancing, avoiding crowds, etc. continue to be strongly recommended for everybody (including those fully vaccinated)
- High levels of COVID-19 vaccination combined with continued use of face masks and implementation of social/physical distancing will better control the pandemic and drive numbers down faster

Transparency About Vaccines

- Understanding safety ongoing priority
- VE not 100% and may not protect all subgroups equally
- Vaccination reduces asymptomatic transmission
- Vaccines show effectiveness but overall impact on pandemic still unknown
- Duration of protection unknown, but emerging

Messaging Around Johnson & Johnson Vaccine Pause

Safety monitoring is working and the government is prioritizing the safety of Americans. The safety monitoring system for vaccines identified the issue as soon as it arose, and this was shared with the public transparently, showing a commitment to safety

As of today, fewer than 10 people of the 6.8M who had gotten J&J vaccine to date were reported with VITT

These events are extremely rare. The chance of being struck by lightning is literally twice that of getting VITT from the J&J COVID-19 vaccine

The risk of getting a blood clot from the J&J vaccine is less than of getting a blood clot from birth control medication, from smoking, or for those hospitalized with COVID-19

PFIZER AND BIONTECH CONFIRM HIGH EFFICACY AND NO SERIOUS SAFETY CONCERNS THROUGH UP TO SIX MONTHS FOLLOWING SECOND DOSE IN UPDATED TOPLINE ANALYSIS OF LANDMARK COVID-19 VACCINE STUDY

Thursday, April 01, 2021 - 06:45am

- Analysis of 927 confirmed symptomatic cases of COVID-19 demonstrates BNT162b2 is highly effective with 91.3% vaccine efficacy observed against COVID-19, measured seven days through up to six months after the second dose
- Vaccine was 100% effective in preventing severe disease as defined by the U.S. Centers for Disease Control and Prevention and 95.3% effective in preventing severe disease as defined by the U.S. Food and Drug Administration
- Vaccine was 100% effective in preventing COVID-19 cases in South Africa, where the B.1.351 lineage is prevalent
- Vaccine safety now evaluated in more than 44,000 participants 16 years of age and older, with more than 12,000 vaccinated participants having at least six months follow-up after their second dose
- The companies plan to share these results with worldwide regulatory agencies soon

Among 46k participants in Phase 3 6m after 2nd dose

- 91% efficacy against symptomatic disease
 - 850 cases in placebo group vs. 77 cases in vaccine group
- 95-100% efficacy against severe disease (CDC vs. FDA definition)
- Effective at preventing infection with B.1.351 variant
 - 800 participants in South Africa (B.1.351 variant predominant)
 - 9 cases in placebo group vs. 0 cases in vaccine group

<https://www.pfizer.com/news/press-release/press-release-detail/pfizer-and-biontech-confirm-high-efficacy-and-no-serious>

Press Releases

Moderna Provides Clinical and Supply Updates on COVID-19 Vaccine Program Ahead of 2nd Annual Vaccines Day

April 13, 2021 at 4:29 PM EDT

 [PDF Version](#)

Phase 3 COVE Study: Updated cases show continued strong efficacy, including greater than 90% against cases of COVID-19 and greater than 95% against severe cases of COVID-19, with approximately 6 months median follow-up post dose 2

Antibody persistence data out to 6 months published in The New England Journal of Medicine

April 13 Moderna 6m Follow up

- Press release from 6-month follow-up of Phase 3 Moderna vaccine trial (n=28k)
- Median 6m after 2nd dose, vaccine efficacy
 - >90% against symptomatic (>900)
 - >95% against severe cases (>100)

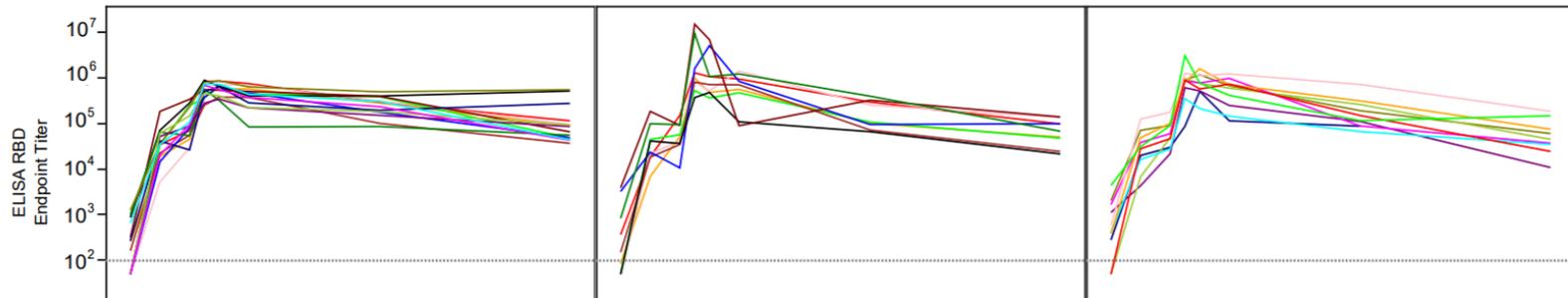
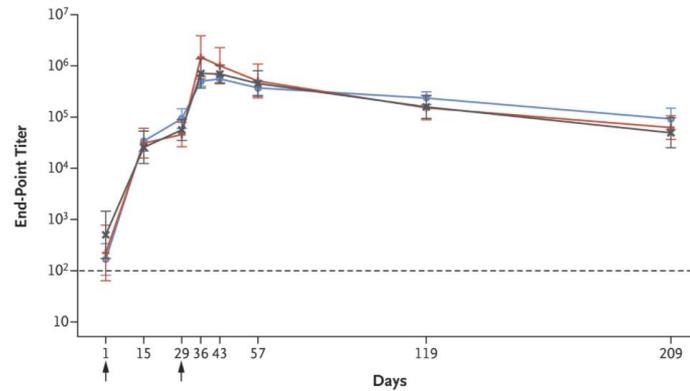
Moderna Antibody Persistence

- Assays that best correlate with VE are not currently known but total antibody (Ab) and neutralizing antibody (NA) may be surrogates of effective immune response
- 33 persons in ongoing Phase 1 trial: no NA before vaccination
- 209d after 1st dose, total Ab high across all age groups

Total Antibody

- Binding Ab high across all age groups (fig)
 - Geometric mean titers
 - 18-55y 92,451
 - 56-70y 62,424
 - >70y 49,373
 - Similar results for pseudovirus NA

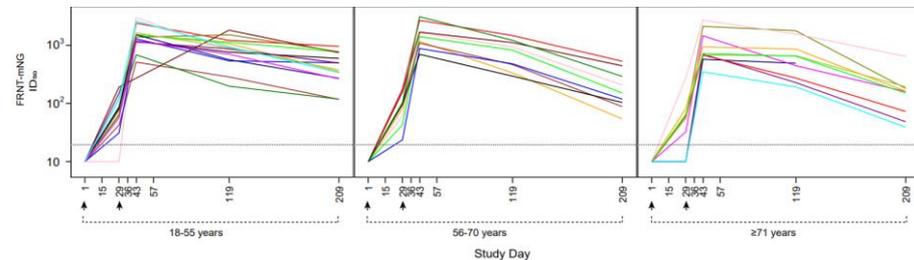
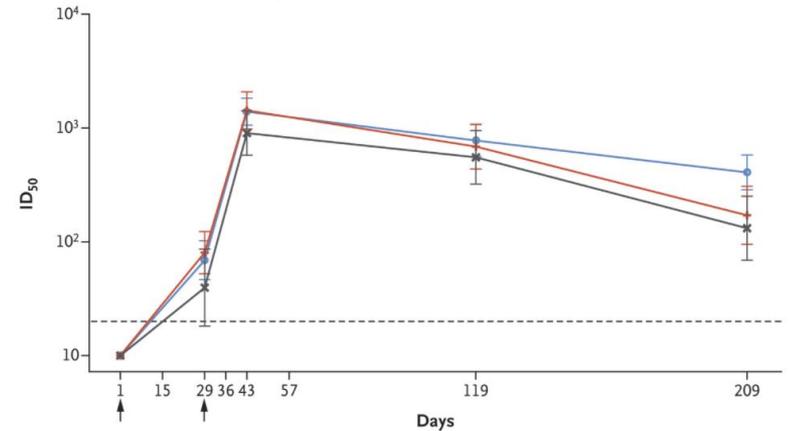
A Receptor-Binding Domain ELISA



More Sensitive Live-Virus Focus-reduction Neutralization mNeonGreen test

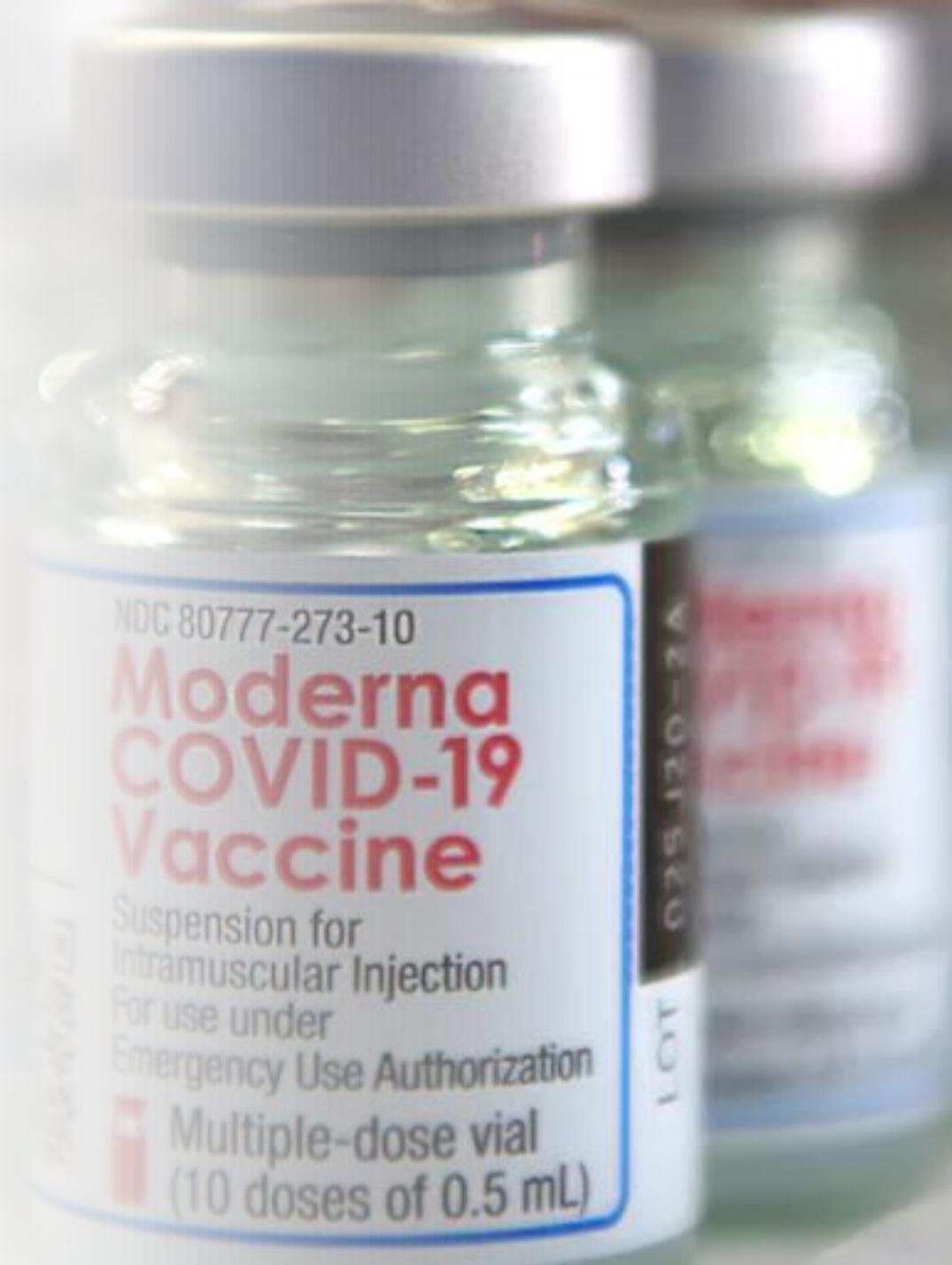
- All had detectable activity
- Age decline 6m from peak 14d:
 - >55yo: ~10-fold after 2nd dose
 - 18-55: down ~half
- In older groups remained >10-fold above pre-vaccination baseline

Live-Virus Neutralization Assay (FRNT-mNG)

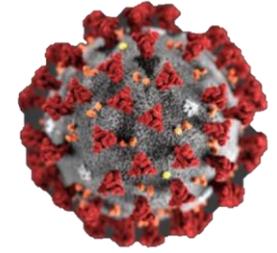


Summary of Moderna Durability

- Half-life estimates
 - 52d for binding Abs
 - 202d for neutralizing Abs
- Preliminary data from this small study indicate likely protection for >1y with mRNA COVID-19 vaccines
- Immune memory assays pending



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